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UNITED STATES PATENT AND TRADEMARK OFFICE

PAT. & T.M. OFFICE  
BOARD OF PATENT APPEALS  
AND INTERFERENCES

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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Ex parte ILYA FEYGIN, RHETT L. AFFLECK, LESLIE A. WALLING,  
PETER KIESELBACH, GREGORY LOUIS KIRK, and IAN HENDERSON

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Appeal No. 2001-0352  
Application 08/872,097

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ON BRIEF

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Before WILLIAM F. SMITH, TIMM, and MOORE, Administrative Patent Judges.

MOORE, Administrative Patent Judge.

**ORDER VACATING REJECTIONS  
AND REMANDING APPLICATION**

This appeal was taken from the examiner's decision rejecting claims 1-9, 17-29, 35-40, and 47-65. Claims 10, 30, 44, 45, and 46 have been cancelled, while claims 11-16, 31-34, 41-43, and 66-67 have been allowed.

**THE INVENTION**

The invention relates to a method and apparatus for exchanging fluid in chemical synthesis procedures. In one claimed embodiment, a plurality of reaction chambers are

held in place by supports and include injection and evacuation ports with pressure seals. Injection and evacuation fittings matingly engage the reaction vessel ports via flexible tubing to supply and receiving vessels. The vessels are movable and are supplied with fluid via dedicated supply lines, instead of changing the fluid through a single supply line.

Claims 1 and 23 are representative of the subject matter on appeal, and are reproduced below:

1. A combinatorial chemical synthesis reaction tool, comprising:

a plurality of reaction vessels,

a reaction vessel support disposed to hold the plurality of reaction vessels in a preferred orientation,

a plurality of injection ports, each injection port including a pressure seal, situated to provide access to one of said reaction vessels, the plurality of injection ports operable for the injection of liquids into said reaction vessels,

a plurality of evacuation ports, each evacuation port including a pressure seal, situated to provide access to one of said reaction vessels, the plurality of evacuation ports operable for the evacuation of liquids from said reaction vessels, and

injection and evacuation fittings formed to matingly engage said respective injection and evacuation ports and to thereby enable the delivery of fluids to the reaction vessels and the evacuation of fluids from said reaction vessels.

23. A universal fluid exchanger, comprising:

a plurality of reaction vessels;

a reaction vessel support disposed to hold the plurality of reaction vessels in a preferred orientation;

a plurality of injection ports, each injection port including a pressure seal, situated to provide access to one of said reaction vessels, the plurality of injection ports operable for the injection of liquids into said reaction vessels;

a plurality of evacuation ports, each evacuation port including a pressure seal, situated to provide access to one of said reaction vessels, the plurality of evacuation ports operable for the evacuation of fluids from said reaction vessels;

injection and evacuation fittings formed to matingly engage said respective injection and evacuation ports and to thereby enable the delivery of fluids to the reaction vessels and the evacuation of fluids from said reaction vessels; and

an actuator for controlling selectively aligning the injection and evacuation ports of the plurality of reaction vessels and the injection and evacuation fittings, respectively.

### THE REFERENCES

The prior art references relied on by the examiner are:

Park et al. (Park)	3,715,190	February 6, 1973 (filed Sept. 23, 1971)
Averette (Averette)	5,147,551	September 15, 1992 (filed Apr. 20, 1990)
Panetz et al. (Panetz)	5,585,068	December 17, 1996 (filed Oct. 14, 1994)
Gleave et al. (Gleave)	5,660,727	August 26, 1997 (filed Mar. 3, 1995)

### THE REJECTIONS

The appealed claims stand rejected as follows:

- (1) Claims 1 through 9, 23 through 29, and 46 under 35 U.S.C. § 103(a) as unpatentable over the combined disclosures of Gleave and Panetz;
- (2) Claims 17 through 22, 29, and 35 through 40 under 35 U.S.C. § 103(a) as unpatentable over the combined disclosures of Gleave and Averette;
- (3) Claims 48 through 65 under 35 U.S.C. § 103(a) as unpatentable over the combined disclosures of Gleave, Panetz, and Park.;

Respecting each rejection under 35 U.S.C. § 103(a), the initial question presented is whether the examiner properly established a prima facie case of obviousness. On this record, the Appellants do not rely on any rebuttal evidence, i.e., objective evidence of non-obviousness, which would serve to rebut a prima facie case.

#### DELIBERATIONS

Our deliberations in this matter have included evaluation and review of the entire prosecution history of this application including specifically the instant specification; the Appellants' Appeal Brief (Paper No. 12); the Examiner's Answer (Paper No. 13); and the above-listed prior art references.

#### DISPOSITION

On consideration of the record, including the above-listed materials, we vacate the rejections under § 103(a) and remand this application to the Examiner for further consideration consistent with this opinion.

#### DISCUSSION

The Appellants have made the following comment under the heading "Grouping of Claims" on page 5 of the Appeal Brief.

Despite the fact that the dependent claims address a wide variety of different and advantageous features claimed in combination, the Examiner rejected these claims with little detailed explanation other than to generally suggest the further combination is obvious without any specific teaching of the claimed combination, or the desirability of making the modification suggested by the Official Action. In light of this rejection, a concise response is difficult. (Appeal Brief, page 5, line 19 – page 6, line 2).

The Appellants further comment that the final rejection did not follow M.P.E.P §706.02 (relating to the proper manner in setting forth a §103 rejection). (Appeal Brief, page 6, lines 12-13).

We agree. The Examiner failed to apply the teachings of any individual reference to any individual claim. Thus, these rejections are not readily susceptible to response by the Appellants or to meaningful review by this merits panel. Further, the Gleave reference at least in part has been misread vis-à-vis the claimed subject matter.

We point to the Examiner's rejection of claims 1-9, 23-29, and 47 as unpatentable over Gleave et al. in view of Panetz as informative. Although the Examiner did not find it necessary to reproduce the rejection in whole, we do so below.

Gleave et al. disclose a reaction tool substantially as claimed. The system comprises a reaction vessel 101, a reaction vessel support 23, an injection port 106 and an evacuation port 109, each includes a pressure seal 116, and injection and evacuation fittings 161 and 164 for matingly engaging the injection and evacuation ports (figures 4, 6, and 10). Gleave et al fail to recite a plurality of injection and evacuation ports supported by top and bottom support plates. Panetz et al. teach an apparatus for automatically separating a compound from liquid specimens including a carousel support plate 70 for supporting a plurality of injection ports 75 and 105 and fitting 72 and 107 for engaging with a reaction vessel 50. Such an arrangement would provide a smaller, compact sample preparation apparatus which can prepare samples for further analysis on either a batch or continuous basis quicker and with greater reliability (figures 1, 2, 13, 14, column 2, lines 4-19, and column 3, lines 50-58).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided the apparatus of Gleave et al. with a carousel support plate for supporting a plurality of injection ports, as taught by Panetz et al., in order to provide a smaller, compact sample preparation apparatus which can prepare samples for further analysis on either a batch or continuous basis quicker and with greater reliability.

With respect to the bottom carousel fitting plate, one of ordinary skill in the art would have found it obvious to provide an additional support plate in the modified system of Gleave et al., for supporting the evacuation fittings, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

For purposes of illustration, we will attempt to read this rejection upon claim 23, as viewed in the claim chart, which follows:

Claim 23 Elements	Rejection
A universal fluid exchanger, comprising:	Not discussed
a plurality of reaction vessels;	The Examiner does not state whether there is a disclosure of a plurality of vessels in Gleave or Panetz.
a reaction vessel support disposed to hold the plurality of reaction vessels in a preferred orientation;	The Examiner states that there is a reaction vessel support 23.
a plurality of injection ports, each injection port including a pressure seal, situated to provide access to one of said reaction vessels, the plurality of injection ports operable for the injection of liquids into said reaction vessels;	The Examiner states that Gleave fails to recite a plurality of injection and evacuation ports <u>supported by top and bottom plates</u> . We, however, do not see the need for the examiner to account for a support limitation in claim 23, as the claim includes no such limitation.
a plurality of evacuation ports, each evacuation port including a pressure seal, situated to provide access to one of said reaction vessels, the plurality of evacuation ports operable for the evacuation of fluids from said reaction vessels;	See immediately above.
injection and evacuation fittings formed to matingly engage said respective injection and evacuation ports and to thereby enable the delivery of fluids to the reaction vessels and the evacuation of fluids from said reaction vessels; and	The Examiner states that injection and evacuation fittings 161 and 164 matingly engage the injection and evacuation ports.
an actuator for controlling selectively aligning the injection and evacuation ports of the plurality of reaction vessels and the injection and evacuation fittings, respectively.	The Examiner does not state where in Gleave or Panetz this feature is found.

As can be seen from the chart above, the rejection is deficient in four elements of the claim. Further, the rejection (see especially the last paragraph) provides little guidance in how to apply the art to the claims. This merits panel is unsure which

elements of which claims the Examiner might be referring to by the last paragraph and we decline to speculate.

It is unnecessary for us to belabor the point by illustrating the deficiencies of each of the other rejections as well. Suffice it to say, they each lack the requisite specificity needed for the establishment of a prima facie case of obviousness. As the examiner bears the initial burden of presenting a prima facie case of unpatentability (In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992)), and that burden has not been met in a manner enabling proper review, we vacate the rejections and remand for the entry of appropriately written rejections.

However, this is not to say that we agree with the Appellants' contention that the claims are patentable. Upon remand, the Examiner should again consider the patentability of the claims in light of the cited art. Indeed, we suggest an independent analysis for each claim pending. Such an exemplary analysis is reproduced in the claim chart, which follows (for example if one were to reject Claim 23 under §102 as anticipated by Gleave):

Claim 23 Elements	Rejection
A universal fluid exchanger, comprising:	Gleave relates to the exchange of fluid in the extraction of an analyte while injecting extraction fluid (col. 2, lines 35-40)
a plurality of reaction vessels;	Gleave clearly indicates provision for a plurality of reaction vessels (elicitation of an analyte from solution can occur in a reaction vessel) (see figs 2, 3, 4, and col. 14, line 36 "one or more cells", col. 14, line 53 "one of cells")
a reaction vessel support disposed to hold the plurality of reaction vessels in a preferred orientation;	Reaction vessel support 23.
a plurality of injection ports, each injection	There is a plurality of cells present, and

port including a pressure seal, situated to provide access to one of said reaction vessels, the plurality of injection ports operable for the injection of liquids into said reaction vessels;	each cell has an injection and evacuation port, there is a plurality of injection and evacuation ports. (column 5, lines 20-31, "inlet conduit" . "static valve", "outlet conduit").
a plurality of evacuation ports, each evacuation port including a pressure seal, situated to provide access to one of said reaction vessels, the plurality of evacuation ports operable for the evacuation of fluids from said reaction vessels;	See above.
injection and evacuation fittings formed to matingly engage said respective injection and evacuation ports and to thereby enable the delivery of fluids to the reaction vessels and the evacuation of fluids from said reaction vessels; and	Injection and evacuation fittings 161 and 164 matingly engage the injection and evacuation ports.
an actuator for controlling selectively aligning the injection and evacuation ports of the plurality of reaction vessels and the injection and evacuation fittings, respectively.	Tray motor aligns cell with inlet and evacuation ports (column 8, lines 3-32).

The above analysis is merely instructional and is not to be construed as the only way in which rejections can be explicated. To be fair to the Appellants and meet the Examiner's burden to establish a proper prima facie case of obviousness under §103 or anticipation under §102, inter alia the rejections must be sufficiently clear and specific such that the record enables a proper review.

Further, there must be some reason, suggestion, or motivation found in the prior art whereby a person of ordinary skill in the field of the invention would make the substitutions required. That knowledge cannot come from the applicants' disclosure of the invention itself. Diversitech Corp v. Century Steps, Inc., 850 F.2d 675, 687-9, 7



USPQ2d 1315, 1318 (Fed. Cir. 1988); Interconnect Planning Corp. v. Feil, 774 F.2d 1132, 1143, 227 USPQ 543, 551 (Fed. Cir. 1985).

In the rejections of record, we believe the stated reason why one would have found it obvious to modify the specific apparatus of Gleave based upon the disclosure of Panetz may be subject to question. Modifying Gleave with Panetz to provide a “smaller, compact sample preparation apparatus which can prepare samples for further analysis on either a batch or continuous basis quicker and with greater reliability” (Final Rejection, Page 3, lines 5-6) is questionable, as Gleave is primarily directed to a single elution of an analyte from a sample.

For the above reasons, the Examiner’s decision rejecting claims 1 through 9, 17 through 29, 35 through 40, and 47 through 65, is vacated. This application is remanded to the Examiner for action consistent with the views expressed in this opinion.

#### Future Proceedings

We state that we are not authorizing a Supplemental Examiner’s Answer under 37 C.F.R. §1.193(b)(1).

No time period for taking any subsequent action in connection with this appeal  
may be extended under 37 CFR § 1.136(a).

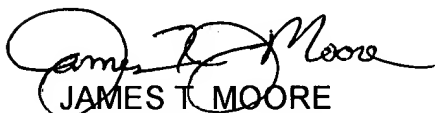
**VACATED and REMANDED**



WILLIAM F. SMITH  
Administrative Patent Judge



CATHERINE TIMM  
Administrative Patent Judge



JAMES T. MOORE  
Administrative Patent Judge

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